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ABSTRACT

A study was conducted to determine the teaching behaviors student teachers exhibited and through analysis and synthesis of the data to identify differences and determine relationships within and among behaviors. During the latter half of his student teaching, each subject (40 secondary and 22 elementary student teachers) was observed for a 20-minute period by a team of four trained and reliable observers, each using a different observation system: 1) Reciprocal Category System (RCS), 2) Teacher Practices Observation Record (TPOR), 3) Florida Taxonomy of Cognitive Behavior (FTCB), and 4) Taxonomy of Imagery Provocation (TIP). Findings revealed that for elementary student teachers: 1) The primary verbal pattern is a teacher questions/student responds behavior with both teachers and student initiating but teacher directing. 2) In cognitive functioning, knowledge level is most common for both teacher and students with translation and interpretation second and third. 3) Teachers are approaching but have not attained experimentalism, the greatest deficits being differentiation of tasks to meet varied needs of children on an individual basis. 4) Teachers employ imagery provoking behavior in approximately two-thirds of the observed behavior, about half of the imagery abstract. Correlations among behaviors were those logically expected. Behavior descriptions appear similar to that of a traditional classroom, lacking the variety of behaviors included in the training on campus. (JS)

MULTIDIMENSIONALITY:

IMPLICATIONS FOR PREPARATION OF TEACHERS

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INTRODUCTION

The employment of observational systems* as a technique for securing data describing behavioral interaction in the classroom is neither a novel nor an unusual research practice. Beginning in the mid-forties with Withall's (9) work and continuing on up to the present, more sophisticated instruments such as the OScAR (6), the Flanders system of interaction analysis (1), the Gallagher-Aschner system (5), and the Teacher Practices Observational Record (3) have been developed and used to produce sizeable amounts of descriptive and meaningful data. It is not surprising then that, to date, numerous studies ranging the entire broad spectrum of classroom behavior have been reported -- nearly all designed to incorporate valid and reliable instruments to collect "objective" data in which a great degree of confidence can be placed.

However, until just recently, in the majority of these cases, an individual study was designed to employ only a single observational system to assess a single dimension of classroom behavior. It is in this regard that the present study departs significantly from earlier studies of this sort: the present study was designed to consider the simultaneous interaction of four different behavioral dimensions in the same classroom setting. This more recent practice of considering more than a single dimension of classroom behavior at a time is termed "multidimensionality." Operationally, it provides for the employment of several (more than one) different observers to observe the same classroom situation simultaneously, each observer using a different observational system.

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*An observational system is any technique designed for the purpose of identifying, examining, classifying, and quantifying specific variables of a classroom teaching-learning situation.

Chronologically, the present study is rooted in and has grown out of an earlier study that featured "multidimensionality" reported by Wood (1969) (10). One hundred seventeen inservice teacher subjects were studied in the Wood study, each subject being observed by three different observers simultaneously, each observer using a different observational system.

PURPOSE OF STUDY

The purpose of this study was to determine by means of observational systems the teaching behaviors student teachers exhibited and through analysis and synthesis of the data, to identify differences and determine relationships within and among behaviors.

The several dimensions of (1) teacher/student verbal behavior (2) the level of teacher/student cognition (3) the experimental/non-experimental teacher behavior and (4) the imagery provoking behavior the teacher employs as pupils interact with subject matter stimuli were utilized in this research conducted by Ober, Wood, Solomon and Cunningham in the Teacher Education program at West Virginia University. Participants in the undergraduate program were given specific training in the use of instruments designed to identify each of the above dimensions in simulated as well as micro-teaching experiences to facilitate incorporation of all these dimensions as desirable elements in teaching-learning situations. The assumption was that there would be a carry-over from their preparation program on campus to their performance in student teaching and, hopefully, to their professional role at a later time in their own classroom situations. This was a pilot study; once data were gathered and analyzed, an attempt to attribute findings to associated variables identifiable in student teaching performances was undertaken. If one can relate various characteristics and/or gain more information concerning behaviors existing in the teaching-learning situation then one may have more confidence that certain forces may be influential in shaping the results uncovered. This study could ultimately result in the creation of hypotheses to be tested in sub-

sequent research, the immediate purpose of this research was to establish a base line or description of student teaching performances to be used to assess changes that may occur if the program is maintained, revised or altered.

PROCEDURES

The population consisted of all teacher education students enrolled in their professional semester of their senior year at West Virginia University. The sample was not randomly assigned; the arbitrarily selected subjects included forty-nine secondary and twenty-two elementary education majors -- a total of seventy-one participants.

During the latter half of his student teaching experience, each subject was observed for a period of approximately twenty minutes by a team of four trained and reliable observers, each using a different observational system: (1) Reciprocal Category System (RCS), (2) Teacher Practices Observation Record (TPOR), (3) Florida Taxonomy of Cognitive Behavior (FTCB), and (4) Taxonomy of Imagery Provocation (TIP). Data obtained from these observations represented the measures that were processed for the study.

The RCS, developed by Ober, (7) is designed to assess the verbal dimension of the classroom. A modification of the Flanders system of interaction analysis, the system includes nine common verbal categories, each of which can be assigned to either teacher or student talk in addition to a single category reserved for silence or confusion.

The FTCB, developed by Brown, Ober, and Soar, (4) is an operationalized modification of Bloom's Taxonomy of Educational Objectives: Cognitive Domain. It includes a total of fifty-five single items which are further divided into seven subdimensions: Knowledge, Translation, Interpretation, Application, Analysis, Synthesis, and Evaluation. Provisions are made for measuring both teacher and student behaviors. Scoring procedures allow subscores for each of the seven subdimensions and a total composite score to be calculated for both teacher and student.

The TPOR, developed by Brown, (3) consists of a total of sixty-two individual items. Predicated on a general philosophy as purported by John Dewey, items are arranged in dyadic order so that the first item of a pair is a nonexperimental teacher behavior; the second an experimental behavior.

The TIP, developed by Solomon (6), is designed to assess teacher behavior on a concrete to abstract imagery related continuum. This continuum includes a lower concrete level, three imagery related middle levels, and a higher abstract level. Distinct patterns of imagery related cognitive teacher behavior are identified and the appropriateness with which teachers deal with students at differing levels of cognitive maturity can be subsequently evaluated by means of this instrument.

FINDINGS

The purpose of this paper was to describe teaching behavior of student teachers in elementary education and to report relationships found between the several variables as determined by single product moment correlations.

From the activities observed among elementary student teachers the most frequent teacher verbal behavior was "eliciting" - asking questions and/or requesting information with the intent that another should answer. This accounts for 18.55 per cent of the total observed verbal behavior and is complemented by student responding - giving direct answers or responses to questions - 17.87 per cent of the total observed verbal behavior. Initiatory verbal behaviors on the part of teachers (8.09 per cent) and by students (8.58 per cent) were next most common. Teacher initiation usually takes the form of lecture, relating background information, expressing opinions, offering ideas, and procedural information. Student initiation is voluntary and extends or expands the scope of the subject being considered. Giving directions, instructions or assignments on the part of the teacher took 16.35 per cent of the observed behavior; another 6.05 per cent was utilized by the teacher's accepting (positive reinforcement) the action, behavior, comments,

TABLE 1 VARIABLES

	RCS	Mean	S. D.
1.	Teacher Warms Climate	0.63	0.99
2.	Teacher Acceptance	6.05	2.49
3.	Teacher Clarification, Extension of Student Ideas	2.73	1.78
4.	Teacher Questions	18.55	5.48
5.	Teacher Answers Questions	0.96	0.83
6.	Teacher Initiation (Lecture)	8.09	7.02
7.	Teacher Directions	6.35	3.59
8.	Teacher Corrects Students	1.38	0.94
9.	Teacher Cools Climate	1.48	1.38
10.	Silence and/or Confusion	25.92	13.47
11.	Students Warm Climate	0.05	0.12
12.	Student Acceptance	0.04	0.10
13.	Students Clarify, Extend Ideas of Others	0.12	0.36
14.	Student Questions	0.37	1.20
15.	Student Answers Questions (Narrow Response)	17.87	7.55
16.	Student Initiation (or Broad Response)	8.58	10.24
17.	Student Directions	0.04	0.11
18.	Student Corrects Teacher or Other Students	0.18	0.28
19.	Students Cool Climate	0.03	0.10
	FTCB		
20.	Teacher Cognition - Knowledge	11.50	11.67
21.	Teacher Cognition - Translation	4.64	2.89
22.	Teacher Cognition - Interpretation	4.00	3.63
23.	Teacher Cognition - Application	1.41	1.33
24.	Teacher Cognition - Analysis	2.14	1.86
25.	Teacher Cognition - Synthesis	0.59	1.01
26.	Teacher Cognition - Evaluation	0.41	1.14
27.	Teacher Cognition - Median	1.87	0.60
28.	Student Cognition - Knowledge	12.77	7.36
29.	Student Cognition - Translation	4.55	2.20
30.	Student Cognition - Interpretation	5.86	3.00
31.	Student Cognition - Application	1.73	1.45
32.	Student Cognition - Analysis	0.86	1.13
33.	Student Cognition - Synthesis	0.45	1.40
34.	Student Cognition - Evaluation	0.05	0.21
35.	Student Cognition - Median	1.81	0.58

or contributions of the student. She amplifies the student contributions--"plays up" the contributions in 2.73 per cent of behavior. Little behavior was observed with the teacher correcting answers or behavior (1.38 per cent), or "cooling" the climate (1.48 per cent) even less behavior was directed to "warming" the climate (0.63 per cent). This indicates that elementary student teachers tend to neither "warm" or "cool" the climate' they tend to ask questions which are answered by their students and both teacher and students volunteer some additional information. Category 10 -- Silence or Confusion -- accounts for 25.91 per cent of the total behavior observed. This includes pauses, short periods of silence and periods of communication not understood by the observer. Since elementary students often benefit by supervised work periods one might hypothesize that much of the behavior classified in Category 10 followed the teacher's giving directions and instructions.

The intellectual (thinking) behavior of students and teachers as shown by the Florida Taxonomy of Cognitive Behavior indicated the most frequent for both teachers and student to be at the Knowledge level -- 11.50 per cent for teachers; 12.77 per cent for students. This requires memorization or recall of information; knowledge about the manner in which specific information is handled; and knowing major generalizations, their interrelations and patterns into which information can be organized and structured. Student cognition is next most frequently observed at the level of interpretation -- (5.86 per cent) and then at translation (4.55 per cent). Translation depends on relevant knowledge - the student must restate in his own terms or use examples or representations of given communications. Interpretation requires an understanding or relationships among ideas to determine larger and more general ideas. In both cases the student is not expected to bring abstractions from other experiences into the situation.

The teacher's level of cognition was not too different: 4.64 per cent Translation; 4.00 per cent Interpretation. It differs mainly in moving up to Analysis (2.14 per cent) where the emphasis is on the breakdown of material into its parts

TABLE 2 VARIABLES

	TPOR	Mean	S.D.
36.	Nature of Situation	19.77	5.71
37.	Nature of Problem	11.68	3.28
38.	Development of Ideas	14.23	6.37
39.	Use of Subject Matter	17.23	4.08
40.	Evaluation	13.86	5.00
41.	Differentiation	5.50	2.26
42.	Motivation - Control	9.18	3.30
43.	Total Experimental Score	89.95	20.56
	TIP		
44.	Concrete Without Imagery	0.45	1.34
45.	Abstract Without Imagery	4.59	3.91
46.	Visual Concrete	2.00	2.23
47.	Non-Visual Concrete	1.09	2.00
48.	Visual Representation	2.91	2.93
49.	Non-Visual Representation	0.73	1.38
50.	Visual Abstract	3.59	3.55
51.	Non-Visual Abstract	2.41	3.34
52.	Total Imagery	12.68	11.75

in order to detect relationships of the parts and the way they are organized. Application, one level lower, occurs 1.73 per cent in student cognition; 1.41 per cent in teacher cognition. At this level the individual must know an abstraction well enough to be able to demonstrate its use in a new situation. The median score for both teacher and students is at the Knowledge level.

The experimental behavior of elementary student teachers shown by a mean score of 89.95 indicates their behavior is approaching experimental or is nearing pupil centerdness. This is most evident in the nature of the situation. (Students are the center of attention, participate actively, express selves freely with the teacher joining in student activities). Use of subject matter is next nearest to experimentalism -- many sources are sought out by the student with the teacher guiding pupils to discover errors, inaccuracies and unwarranted conclusions. Additional evidence approximating experimentalism is that to some extent ideas are developed through pupil activity -- suggesting alternative answers, judging comparative values of answers with evidence.

The area showing least evidence of experimentalism is in minimal attention to differentiation of tasks, materials, and standards. Little evidence of experimentalism was observed in evaluation, motivation and control procedures. Evaluation must be dependent upon the student's activity - evaluates own work, tests ideas, while the teacher withholds judgement on pupil's behavior or work. Motivation and control must be directed more toward self discipline on the part of the student.

The image provoking behavior as measured by TIP, (causing "a conscious mental representation of a perceivable absent of non-existent object, process or concept") occupied approximately two-thirds of the total observed teacher behavior in doing things related to imagery. This image provoking behavior was predominantly abstract-- 3.59 was Visual Abstract with Imagery and 2.41 was Nonvisual Abstract with Imagery; another 4.95 was Abstract without Imagery. Representional with Imagery was second most frequent, 2.91 was visual 0.73 was non-visual. Concrete with Imagery was

slightly less frequent -- visual 2.00 and non-visual 1.09. The elementary student teacher pitched her teaching primarily on the abstract level with about half of this behavior providing possible imagery.

Correlation coefficients indicate that certain teacher/student behaviors tend to occur together (positive correlations) and others tend to not occur together (negative correlations). Only those of most significant at the .01 or .05 level of confidence will be reported. (A complete tabulation of these appears in the appendix). The RCS showed teacher/teacher behaviors occuring together were Warms (1) and Initiates (6); and Accepts (2) and Elicits (4). Not occuring together were Responds (5) and Directs (7). Teacher/student behaviors occuring together were Accepts (2) and Responds (15); Elicits (4) and Responds (15); Responds (5) and Elicits (14); Directs (7) and Silence (10) and Corrects (8) and Corrects (18). Teacher/student behaviors not occuring together were: Elicits (4) and Silence (10); Directs (7) and Elicits (14); and Directs (7) and Responds (15).

Student/student behaviors occuring together were: Warms (11) and Directs (17); Amplifies (13) and Initiates (16); Directs (17) and Corrects (18), and Corrects (18) and Cools (19). Not occuring togehter were Accepts (12) and Responds (15).

Use of FTCB showed correlations between the level of cognitve functioning of teacher and level of cognitive activity on the part of students. With the teacher functioning raised to the Application level, student activity is at the Knowledge level but teacher functioning at Analysis level occured with pupil activity at Analysis level, also the highest correlation existed if both teacher and student functioned at Synthesis level.

Correlations among teacher behaviors only occured as follow: Knowledge with Translation, Interpretation, and Application; Translation with Interpretation Application and Synthesis; and Interpretation with Synthesis. Among student behaviors only these correlations occurred: Translation with Application; Application with Synthesis and Analysis with Synthesis. A negative correlation between Knowledge

VARIABLES USED IN CORRELATIONS

RCS

1. Teacher Warms Climate
2. Teacher Acceptance
3. Teacher Clarification, Extension of Student Ideas
4. Teacher Questions
5. Teacher Answers Questions
6. Teacher Initiation (Lecture)
7. Teacher Directions
8. Teacher Corrects Students
9. Teacher Cools Climate
10. Silence and/or Confusion
11. Students Warm Climate
12. Student Acceptance
13. Students Clarify, Extend Ideas of Others
14. Student Questions
15. Student Answers Questions (Narrow Response)
16. Student Initation (or Broad Response)
17. Student Directions
18. Student Corrects Teacher or Other Students
19. Students Cool Climate

FTCB

20. Teacher Cognition - Knowledge
21. Teacher Cognition - Translation
22. Teacher Cognition - Interpretation
23. Teacher Cognition - Application
24. Teacher Cognition - Analysis
25. Teacher Cognition - Synthesis
26. Teacher Cognition - Evaluation
27. Teacher Cognition - Median
28. Student Cognition - Knowledge
29. Student Cognition - Translation
30. Student Cognition - Interpretation
31. Student Cognition - Application
32. Student Cognition - Analysis
33. Student Cognition - Synthesis
34. Student Cognition - Evaluation
35. Student Cognition - Median

TPOR

36. Nature of Situation
37. Nature of Problem
38. Development of Ideas
39. Use of Subject Matter
40. Evaluation
41. Differentiation
42. Motivation - Control
43. Total Experimental Score

TIP

44. Concrete Without Imagery
45. Abstract Without Imagery
46. Visual Concrete
47. Non-Visual Concrete
48. Visual Representation
49. Non-Visual Representation
50. Visual Abstract
51. Non-Visual Abstract
52. Total Imagery

CORRELATIONS AMONG VARIABLES

RCS

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
RCS	1																			
	2																			
	3																			
	4		.49																	
	5																			
	6	.50																		
	7					-.46														
	8																			
	9																			
	10				-.46			.44												
	11																			
	12																			
	13																			
	14					.76		-.41												
	15		.46		.67		-.53	-.47			-.47		-.43							
	16										-.54			.49						
	17											.73								
	18								.50									.59		
	19																		.72	
FTCB	20		-.42				.52													
	21																			
	22															-.41				
	23							.42												
	24																			
	25																			
	26					.66														
	27										.43									
	28																.46			
	29																			
	30																		.51	.41
	31										.41									
	32																			
	33																			
	34																			
	35										.50									

RCS

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
TPOR	36				.44					-.46		-.41				.42				
	37																	.51		
	38			-.45																.40
	39			-.64																
	40																	.47	.62	.80
	41							.51					-.44							.50
	42			-.42		-.41		.49												.72
	43			-.44																.58
TIP	44																			.44
	45			.45		.73		.54							.55					
	46							.49				.43								
	47																			
	48					-.47		.57							.42					.45
	49							.48												
	50					-.46														
	51																			
	52					-.53		.47												

FTCB

		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
FTCB	20																
	21	.66															
	22	.68	.70														
	23	.66	.56	.60													
	24																
	25		.45	.47													
	26																
	27	-.41				.55											
	28	.78			.51												
	29																
	30								.42								
	31	-.41							.49	-.52	.50						
	32					.42											
	33						.81						.55	.49			
	34																
	35	-.48							.73	-.57		.41	.67		.44		
TPOR	36																
	37																
	38	.61			.48					.63							
	39																
	40									.56							
	41		.48	.42	.42												
	42																
	43	.44								.56							
TIP	44										.58	.41					
	45							.62	-.55			.41	-.52				-.48
	46					.51			.64				.47				
	47					.47			.66				.50				
	48																
	49					.51			.44				.43				
	50			.42		.59			.68								.41
	51					.51			.67			.42	.52	.52	.54		.58
	52					.65			.77				.56				.47

		TPOR								TIP							
		36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
TPOR	36																
	37																
	38		.52														
	39			.57													
	40		.46	.64													
	41		.54	.59		.51											
	42	.53		.68	.56	.65	.63										
	43	.63	.57	.90	.62	.74	.67	.83									
TIP	44					.54											
	45							-.52									
	46						.41				-.70						
	47										-.61	.79					
	48						.48	.52			-.64	.61					
	49										-.52	.63	.68	.69			
	50										-.68	.52	.63		.47		
	51										-.51		.49			.78	
	52										-.81	.81	.83	.60	.77	.83	.74

.01 Level of Significance = 0.53

.05 Level of Significance = 0.41

and Application occured; in fact, Knowledge level functioning on the part of either the teacher or student did not occur with student Application.

Finally moving to the multidimensional approach significant correlations were found between behaviors identified by the four instruments separately. With verbal behaviors identified by RCS positive correlations include (1) Teacher Questions (RCS) with Nature of Situation (TPOR); (2) Teacher Responds (RCS) with Teacher cognition level at Evaluation (FTCB) and use of Abstractions without Imagery (TIP); (3) Teacher Initiates (RCS) with Knowledge level of teacher cognition (FTCB); (4) Teacher Directs (RCS) with Analysis level of teacher cognition (FTCB); with Differentiation and Motivation/Control on TPOR; and with Visual Concrete Imagery, and Visual and Nonvisual Representational Imagery. (5) Silence or Confusion (RCS) with Application (FTCB), (6) Student Warms (RCS) with Visual Concrete with Imagery (TIP); (7) Student Responds (RCS) with Nature of Situation (8) Student Initiates (RCS) with student Knowledge level of Cognition (FTCB); (9) Student Directs (RCS) with Nature of Problem and Evaluation (TPOR); (10) Student Corrects with student Interpretation level of cognition (FTCB) and Evaluation (TPOR); and (11) student Cools (RCS) with student Interpretation level of cognition (FTCB), with Development of Ideas, Evaluation Differentiation and Motivational/Control (TPOR) and with Concrete without Imagery and Visual Representation with Imagery (TIP).

Negative correlations indicated that certain behaviors did not occur together as following: (1) teacher Accepts (RCS) vs. teacher Knowledge level of cognition (FTCB) (2) teacher Amplifies (RCS) vs. Development of Ideas, Use of Subject Matter, and Motivation/Control (TPOR) (3) teacher Responds (RCS) vs. Motivation/Control, Visual Representation with Imagery, Visual Abstract with Imagery (TIP). (4) teacher Directs (RCS) vs. Abstract without Imagery (5) teacher Cools (RCS) vs. Nature of Situation (TPOR) (6) student Warms (RCS) vs. Nature of Situation (TPOR) (7) student Accepts (RCS) vs. Differentiation TPOR. (8) Student Questions (RCS) vs. Visual Representation with Imagery (TIP) and (9) student Responds (RCS) vs. teacher Inter-

pretation level of cognition (FTCB).

Positive correlations indicated that Development of Ideas (TPOR) occurred with teacher cognition or student cognition at Knowledge level (FTCB) and with teacher cognition at Application level. Evaluation (TPOR) occurred with pupil cognition at Knowledge level (FTCB).

Differentiation (TPOR) occurred with teacher cognition at Translation, Application or Analysis level (FTCB) and with Visual Concrete with Imagery and Visual Representation with Imagery (TIP).

Motivation/Control (TPOR) occurred with Visual Representation with Imagery but did not occur with Abstract without Imagery (TIP).

Teacher cognition at Interpretation level (FTCB) occurred with Visual Abstract with Imagery (TIP); Analysis level of teacher cognition (FTCB) occurred with Imagery behavior either Visual Concrete, Nonvisual Concrete, Nonvisual Representational, Visual Abstract and Nonvisual Abstract (TIP); and Evaluation level of teacher cognition (FTCB) occurred with Abstract without Imagery (TIP).

Student cognition at Translation level (FTCB) occurred with Concrete without Imagery (TIP). Interpretation level of student cognition (FTCB) occurred with Concrete without Imagery and Nonvisual Abstract with Imagery (TIP) but did not occur with Abstract without Imagery.

Application level of student cognition (FTCB) occurred with Imagery Behavior, either Visual Concrete, Nonvisual Concrete, Nonvisual Representational and Nonvisual Abstract (TIP). It did not occur when Abstract without Imagery was used (TIP).

Both Analysis and Synthesis levels of student cognition (FTCB) occurred with Nonvisual Abstract with Imagery (TIP).

SUMMARY OF FINDINGS

1. The elementary student teacher, near the end of her laboratory experience, exhibits primarily a teacher questions - student responds behavior; secondly, both the teacher and student initiates or presents information and thirdly, the teacher

directs. Most common in total observed behavior is silence or communication unidentifiable by the observer.

2. In cognitive functioning, Knowledge level is most common for both teacher and students; Translation and Interpretation for both are respectively second and third common. Teachers used Analysis more than Application; students used Application more than Analysis. The median score of both teachers and students was at the more complex Knowledge level. (While it was still the memory level, it deals with major generalizations, their interrelationships and patterns.

3. Elementary student teachers were approaching but had not attained Experimentalism. The greatest deficits were differentiation of tasks to meet varied needs of children on an individual basis.

4. Elementary student teachers did employ imagery provoking behavior in approximately two-thirds of the observed behavior. About half of the imagery was abstract, either visual or nonvisual.

IMPLICATIONS

The correlations found among behaviors indentified by different instruments appear to be those one would logically expect to occur together. The behavior descriptions of elementary student teachers appear somewhat similar to the behaviors one expects to find in a traditional elementary classroom setting, but lacks the variety of behaviors included in the training on campus.

One might question whether the supervising teacher has provided only a minor role and commensurate responsibilities for the student teacher or has she a similar pattern and thereby influenced the student teacher to model her performance to imitate that of the supervising teacher? With little evidence near the end of the semester of the behaviors recommended in their professional courses, demonstrated in simulated teaching of peer group and practiced in micro-teaching experiences while on campus, one questions whether similar data would result had research observers collected data in the early part and/or middle of the student teaching experience. If students do

indeed exhibit more varied behaviors prior to leaving campus for student teaching, when and due to what circumstances does the change occur?

Should "episode teaching" or some other variation of laboratory experience replace the traditional student teaching experience?

If so, would the final product evolve with behaviors more representative of their preparation? Use of the four observational dimensions simultaneously will provide a more comprehensive description of teacher/student behavior as these and other questions are answered.

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A P P E N D I X

FIG. 1--Summary of Categories for the Reciprocal Category System

Category Number Assigned to Party 1[1]	Description of Verbal Behavior	Category Number Assigned to Party 2[2]
1	"WARMS" (INFORMALIZES) THE CLIMATE: Tends to open up and/or eliminate the tension of the situation; praises or encourages the action, behavior, comments, ideas, and/or contributions of another; jokes that release tension not at the expense of others; accepts and clarifies the feeling tone of another in a friendly manner (feelings may be positive or negative; predicting or recalling the feelings of another are included).	11
2	ACCEPTS: Accepts the action, behavior, comments, ideas, and/or contributions of another, positive reinforcement of these.	12
3	AMPLIFIES THE CONTRIBUTIONS OF ANOTHER: Asks for clarification of, builds on, and/or develops the action, behavior, comments, ideas and/or contributions of another.	13
4	ELICITS: Asks a question or requests information about the content subject, or procedure being considered with the intent that another should answer (respond).	14
5	RESPONDS: Gives direct answer or response to questions or requests for information that are initiated by another; includes answers to one's own questions.	15
6	INITIATES: Presents facts, information, and/or opinion concerning the content, subject, or procedures being considered that are self-initiated; expresses one's own ideas lectures (includes rhetorical questions not intended to be answered).	16
7	DIRECTS: Gives directions, instructions, orders, and/or assignments to which another is expected to comply.	17
8	CORRECTS: Tells another that his answer or behavior is inappropriate or incorrect.	18
9	"COOL" (FORMALIZES) THE CLIMATE: Makes statements intended to modify the behavior of another from an inappropriate to an appropriate pattern; may tend to create a certain amount of tension (i.e., bawling out someone, exercising authority in order to gain or maintain control of the situation, rejecting or criticizing the opinion or judgment of another).	19
10	SILENCE OR CONFUSION: Pauses, short periods of silence, and periods of confusion in which communication cannot be understood by the observer.	10

[1] Category numbers assigned to Teacher Talk when used in classroom situation.
[2] Category numbers assigned to Student Talk when used in classroom situation.

FLORIDA TAXONOMY OF COGNITIVE BEHAVIOR

Directions

The Florida Taxonomy of Cognitive Behavior provides a framework for observing and recording the cognitive behavior of the teacher and students in a classroom. Your role as an observer is to watch and listen for signs of the behavior described and to record the behavior as it occurs.

There are five (5) separate 6-minute observation and marking periods in each 30-minute visit to the classroom. These are indicated by the column headings I, II, III, IV, and V. During period I, as you observe the behavior of the teacher and students, go down the list of items and place a check (✓) in the T column (teacher behavior) and/or P column (pupil behavior) beside all items you saw occur. Leave blank all the items that did not occur or for which you cannot make a discrimination. A particular item is marked only once in a given column, no matter how many times that behavior occurs within the 6-minute observation period.

Repeat this process for the second 6-minute period, marking in Column II. Repeat again for the third, fourth, and fifth 6-minute periods, marking in Columns III, IV, and V. Please add the total number of (✓) recorded in Columns I through V for each teacher or pupil behavior and record in the columns headed TOT. There may be from 0 to 5✓'s for each item.

_____
Name of Teacher

_____
Date

_____
School

_____
Name of Observer

_____
Grade & Subject

FLORIDA TAXONOMY OF COGNITIVE BEHAVIOR

T	TOT P	T/ P	T/ P	T/ P	T/ P	T/ P	
							1.10 Knowledge of Specifics
							1. Reads
							2. Spells
							3. Identifies something by name
							4. Defines meaning of term
							5. Gives a specific fact
							6. Tells about an event
							1.20 Knowledge of Ways and Means of Dealing With Specifics
							7. Recognizes symbol
							8. Cites rule
							9. Gives chronological sequence
							10. Gives steps of process, describes method
							11. Cites trend
							12. Names classification system or standard
							13. Names what fits given system or standard
							1.30 Knowledge of Universals and Abstractions
							14. States generalized concept or idea
							15. States a principle, law, theory
							16. Tells about orgaztn or structure
							17. Recalls name of prin, law, theory
							2.00 Translation
							18. Restates in own words or briefer terms
							19. Gives cncrt exmpl of an abstract idea
							20. Verbalizes from a graphic rprsntatn
							21. Trans vrbiztn into graphic form
							22. Trans fig stmnts to lit stmnts, or vice v
							23. Trans for lang to Eng, or vice versa

TOT T	P	T/ P	T/ P	T/ P	T/ P	T/ P	3.00 Interpretation
							24. Gives reason (tells why)
							25. Shows similarities, diffrncs
							26. Summarizes or concludes frm obs of evdnce
							27. Shows cause and effect ritnshp
							28. Gives analogy, simile, metaphor
							29. Performs a directed task or process

4.00 Application

						30. Applies previous learning to new sitn
						31. Applies principle to new situation
						32. Apply abstrct knldg in a prctcl sitn
						33. Idntifs, selects, and carries out proces

5.00 Analysis

						34. Distngshs fact from opinion
						35. Distngshs fact from hypothesis
						36. Distngshs cnclsn frm stmnts wch suppt it
						37. Points out unstated assumption
						38. Shows interaction or relation of element
						39. Points out prticlrs to jstfy cnclsn
						40. Checks hypthss with given info
						41. Dstngshs rel frm irrelvnt stmnts
						42. Detects error in thinking
						43. Infers prpse, pt of view, thghts, feelin
						44. Recog bias or propaganda

6.00 Synthesis (Creativity)

						45. Reorganizes ideas, materials, process
						46. Produces unique cmmnctn, divergent idea
						47. Produces a plan, prpsd set of oprtns
						48. Designs an apparatus
						49. Designs a structure
						50. Devises scheme for classifying info
						51. Formulates hypothesis, intelligent guess
						52. Mks dedctns frm abstrct smbls, propostns
						53. Draws inductive generalizatn frm specifc

7.00 Evaluation

						54. Evaluates something from evdnce
						55. Evaluated something from criteria

Name of Teacher _____ Date _____ (month) (day) (year)

School _____ _____ (city) (state)

Grade _____ Subject _____ Name of Observer-judge _____

TEACHER PRACTICES OBSERVATION RECORD

DIRECTIONS

The Teacher Practices Observation Record provides a framework for observing and recording the classroom practices of the teacher. Your role an an observer is to watch and listen for signs of the sixty-two teacher practices listed and to record whether or not they were observed, WITHOUT MAKING JUDGMENTS AS TO THE RELATIVE IMPORTANCE OR RELEVANCE OF THOSE PRACTICES.

There are three (3) separate 10-minute observation and marking periods in each 30-minute visit to the teacher's classroom. These are indicated by the column headings I, 11, 111. During period 1, spend the first 5 minutes observing the behavior of the teacher. In the last 5 minutes go down the list and place a check ( ) mark in Column 1 beside all practices you saw occur. Leave blank the space beside practices which did not occur or which did not seem to apply to this particular observation period. A practice which occurs a dozen times gets one check mark, the same as an item which occurs only once.

Repeat this process for the second 10-minute period, marking in Column 111. Please add the total number of check marks recorded in columns 1, 11, and 111 for each teacher practice and record in the column headed TOT. There may be from 0 to 3 total check marks for each item.

TEACHER PRACTICES OBSERVATION RECORD

TOT	I	II	III	TEACHER PRACTICES
				A. NATURE OF THE SITUATION
				1. T makes self center of attention.
				2. T makes p center of attention.
				3. T makes something itself center of p's attention.
				4. T makes doing something center of p's attention.
				5. T has p spend time waiting, watching, listening.
				6. T has p participate actively.
				7. T remains aloof or detached from p's activities.
				8. T joins or participates in p's activities.
				9. T discourages or prevents p from expressing self freely.
				10. T encourages p to express self freely.
				B. NATURE OF THE PROBLEM
				11. T organizes learning around Q posed by T.
				12. T organizes learning around p's own problem or Q.
				13. T prevents situation which caused p doubt or perplexity.
				14. T involves p in uncertain or incomplete situation.
				15. T steers p away from "hard" Q or problem.
				16. T leads p to Q or problem which "stumps" him.
				17. T emphasizes gentle or pretty aspects of topic.
				18. T emphasizes distressing or ugly aspects of topic.
				19. T asks Q that p can answer only if he studied the lesson.
				20. T asks Q that is not readily answerable by study of lesson.
				C. DEVELOPMENT OF IDEAS
				21. T accepts only one answer as being correct.
				22. T asks p to suggest additional or alternative answers.
				23. T expects p to come up with answer T has in mind.
				24. T asks p to judge comparative value of answers or suggestions.
				25. T expects p to "know" rather than to guess answer to Q.
				26. T encourages p to guess or hypothesize about the unknown or untested.
				27. T accepts only answers or suggestions closely related to topic.
				28. T entertains even "wild" or far-fetched suggestion of p.
				29. T lets p "get by" with opinionated or stereotyped answer.
				30. T asks p to support answer or opinion with evidence.

TOT	I	II	III	
				D. USE OF SUBJECT MATTER
				31. T collects and analyzes subject matter for p.
				32. T has p make his own collection and analysis of subject matter.
				33. T provides p with detailed facts and information.
				34. T has p find detailed facts and information on his own.
				35. T relies heavily on textbook as source of information.
				36. T makes a wide range of informative material available.
				37. T accepts and uses inaccurate information.
				38. T helps p discover and correct factual errors and inaccuracies.
				39. T permits formation of misconceptions and over-generalizations.
				40. T questions misconceptions, faulty logic, unwarranted conclusions.
				E. EVALUATION
				41. T passes judgment on p's behavior or work.
				42. T withholds judgment on p's behavior or work.
				43. T stops p from going ahead with plan which T knows will fail.
				44. T encourages p to put his ideas to a test.
				45. T immediately reinforces p's answer as "right" or "wrong"
				46. T has p decide when Q has been answered satisfactorily.
				47. T asks another p to give answer if one p fails to answer quickly.
				48. T asks p to evaluate his own work.
				49. T provides answer to p who seems confused or puzzled.
				50. T gives p time to sit and think, mull things over.
				F. DIFFERENTIATION
				51. T has all p working at same task at same time.
				52. T has different p working at different tasks.
				53. T holds all p responsible for certain material to be learned.
				54. T has p work independently on what concerns p.
				55. T evaluates work of all p by a set standard.
				56. T evaluates work of different p by different standards.
				G. MOTIVATION, CONTROL
				57. T motivates p with privileges, prizes, grades.
				58. T motivates p with intrinsic value of ideas or activity.
				59. T approaches subject matter in direct, business-like way.
				60. T approaches subject matter in indirect, informal way.
				61. T imposes external disciplinary control on p.
				62. T encourages self-discipline on part of p.

TAXONOMY OF IMAGE PROVOCATION PROFILE

Gerard Solomon

Directions

The Taxonomy of Image Provocation Profile provides a means of observing and recording the image provoking behavior of the teacher in the classroom. Your role as an observer is to watch and listen for signs of the behavior described, and to record whether or not it was observed.

There are twelve (12) separate 2-minute observation periods in each 24 minute visit to the classroom. During each of the two minute observation period place a check mark in an appropriate imagery level category as the behavior is exhibited. Only if no imagery is provoked during the 2-minute period should the PROVOKES NO IMAGERY section be marked. At the end of the 12th marking period add up the totals for each classification and record these in the first column, headed TOT.

Name of Teacher _____ Date _____

School _____

Name of Observer _____

Subject and Grade _____